



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF: :  
SUGIURA ET AL. : EXAMINER: J. L. DOTE  
SERIAL NO.: 10/618,640 :  
FILED: JULY 15, 2003 : GROUP ART UNIT: 1756

FOR: EXTERNAL ADDITIVE FOR TONER FOR  
ELECTROPHOTOGRAPHY, TONER FOR ELECTROPHOTOGRAPHY,  
DOUBLE-COMPONENT DEVELOPER FOR ELECTROPHOTOGRAPHY,  
IMAGE-FORMING PROCESS USING THE TONER, AND  
IMAGE-FORMING APPARATUS USING THE TONER

DECLARATION UNDER 37 CFR 1.132

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Now comes **Hideki Sugiura** who deposes and states:

1. That I am a graduate of Shizuoka University, and received Master degree in Science in the year of 1992.
2. That I have been employed by Ricoh Company Limited for 13 years as a researcher of Analytical Chemistry, i.e., functional materials (1992-1999) and of Developer, i.e., a toner (1999 to the present).
3. That I am a co-inventor in the above-identified application.
4. That I have read and understood Sugiura et al. (US 2003/0031946), which have been cited against the claims in the above-identified application.
5. That oxide fine particles disclosed in Sugiura et al. do not satisfy the requirements of the present invention.
6. That the following additional experiment was conducted under my supervision during the period of from February 16, 2000 to

January 20, 2006.

**Experiment:**

The following components were mixed to dissolve polydimethyl siloxane in toluene.

Polydimethyl siloxane (manufactured by Shin-Etsu Chemical Co., Ltd., and having a viscosity of 350 cs)	3
Toluene	100

Thirty (30) parts of a silica OX-50 manufactured by Nippon Aerosil Co. and having an average primary particle diameter of 40 nm was gradually added into the solution and dispersed while agitating and irradiating the mixture with ultrasonic waves. After it was visually confirmed that there were no agglomerated particles of the silica in the dispersion, the toluene was removed using a rotary evaporator. The thus prepared solid was then dried at 50°C under a reduced pressure using a decompression oven such that the weight of the residue did not change. Thus a silicone-coated silica was prepared. The thus prepared silicone-coated powder was subjected to a heat treatment at 200°C for 2 hours in an electric furnace under nitrogen gas flow. Then the powder was dissociated (i.e., the agglomerated powder was released) using a jet mill and then collected by a bag filter. The average primary particle diameter of the silicone-coated was not changed (i.e., 40 nm). The external additive was prepared while changing the conditions of the dispersion operation in the hydrophobizing treatment, the heat treatment conditions, etc. such that a compound having an organopolysiloxane structure remains in the residual components of the external additive treated with chloroform when analyzed by the Py-GCMS analysis mentioned above.

**Results:**

The oxide fine particles of Sugiura were subjected to the measurements of the primary particles diameter, the standard

deviation of primary particle diameter, the circularity SF-1, and the circularity SF-2 by using S-5200 (trade name, available from Hitachi, Ltd.) which is a high-resolution field emission scanning electron microscope (FE-SEM) and Luzex AP (trade name, available from NIRECO Corporation which is an image analyzer.

The results are summarized in the following table.

	Primary particle diameter R (nm)	Standard deviation $\sigma$ of primary particle diameter (nm)	Circularity SF1	Circularity SF2
Oxide fine particles of Sugiura	40	15	133	128

#### **Conclusion:**

As shown in the table, it was confirmed that the primary particle diameter R and the standard deviation  $\sigma$  of Sugiura et al. were 40 and 15, respectively, therefore, the oxide fine particles of Sugiura et al. satisfied the requirement of  $R/4 \leq \sigma \leq R$  defined in Claim 1 of the present invention. However, the oxide fine particles of Sugiura et al. did not satisfy the requirements the circularity SF-1 of from 100 to 130 and the circularity SF-2 of from 100 to 125 defined in Claim 1 of the present invention.

Accordingly, it can be said that the oxide fine particles of Sugiura et al. do not necessarily satisfy all the requirements of the present invention, and thus the present invention is not anticipated by or obvious over Sugiura et al.

7. The undersigned petitioner declares further that all statements

made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

8. Further deponent saith not.

Hideki Sugiura  
Hideki Sugiura

February 9, 2006  
Date